



Forge Welkin Co.

9925 SW Commerce Circle
Wilsonville, Oregon 97070

Continuing Education Course Outline

Course date and time: July 28, 2004 8:00am to 5pm.

Location: Forge Welkin Co. 9925 SW Commerce Circle Wilsonville Oregon 97070

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Contact: Steve Kaser 800-570-1236

This class will be offered to all well drilling operators. Class size is limited to 25 people on a first come first serve basis with registration required by July 26, 2004 via fax or e-mail. Lunch will be provided. There will be no charge for this class.

**Class subjects are: Drilling with overburden tools - in the Pacific Northwest
Down the hole hammers - their use and maintenance
Down hole hammer bits - all you should know**

Class length: 7.5 hours

The class schedule is as follows:

8:00 am – 10:00 am

Subject: Overburden tools

Instructor: Ted Pulliam, owner Olsen Well Drilling Boring, Oregon

10:00 am – 10:15 am Break

10:15 am – 12:00 noon

Subject: Hammer bits

Instructor: Steve Kaser, Forge Welkin Co.

12:00 -1:00 pm Lunch

1:00 -3:00 pm

3:00 -3:15 pm Break

3:15 --5:00 pm

Subject: Down hole hammers

Instructors: Greame Exelby, Sandvik Mining & Construction

Class description: Drilling with overburden tools -in the Pacific Northwest

This class presents an in depth look at the various types of overburden tools available and the differences between them. Special attention is given to how they work and are used to attain the successful completion of water wells in various formations. Also to be discussed are the different methods of sealing water wells when overburden tools are used. (2 hours)

Instructors Qualifications:

Ted Pulliam has been a licensed water well contractor in Oregon for over 30 years. He currently owns and operates Olsen Well Drilling and Pump located in Boring Oregon. He first started using overburden tools in 1985 and they have been an important part of his drilling business ever since. He has constructed literally hundreds of water wells using overburden tools in the Pacific Northwest. Ted is widely accepted as the "go to man" to test new overburden tools as they become available. He has played a very important role in developing new innovative ways to install deep seals in wells when using overburden tools. Working closely with the Water Resource Dept. in Oregon he has demonstrated that overburden systems are a viable tool to use in the construction of water wells that meet current regulations. The various types of overburden tools will be shown in the class.

Class description: Down the hole hammer bits -all you should know

The manufacture, selection, care, and use of hammer bits will be presented in a format to educate the drill rig operator how the proper or improper selection and use of hammer bit." can affect the construction and/or quality of completed water wells. Also discussed will be the safety issues associated with the sharpening of hammer bits. New technology in carbides and metallurgy will be discussed. (1.75 hours)

Instructors Qualifications:

Steve Kaser has worked in the water well drilling industry for 35 years. He has drilled over 400 water wells using all types of drilling techniques and models of drill rigs and tooling. He currently holds the position of Drilling Product Manager at Forge Wellkin Co. He has given CELT seminars at both Washington and Oregon drilling association

meetings and is a current active member of drilling associations covering the 11 western states and Alaska.

Class description: Down the hole hammers – their use and maintenance

This class gives the opportunity for the attendees to learn all about the various types of down the hammers and how to achieve optimum performance. Hammer selection to match the rigs capability with the formation being drilled will be presented. New technological advances in materials, design and manufacturing will be discussed. Hammer lubricants and how they affect well water and the drill site environment is a very important part of this class. **(3.75 hours)**

Instructor Qualifications:

Graeme Exelby currently gives down hole hammer training classes all over the world for Sandvik Mining & Construction. His classes are requested and well attended by large corporations and small owner operated companies alike. He has been with Sandvik for over 20 years. During that time holding many different positions from product specialist to brand manager. He is extremely well versed in hammer drilling and is highly regarded in the drilling industry as an excellent teacher with a very strong technical background. Further he has had direct involvement in the development of new tooling and manufacturing processes during his years at Sandvik. Graeme has given a class at the Washington Groundwater seminar at Ellensburg in the past.

One or more of the following methods has advertised this continuing education class.

Forge Welkin sales people in the course of their daily business
Dick Szymarek Dept. of Ecology
Washington Groundwater Association
Oregon Drilling Association